

Abstract

The invention relates to an arrangement for optically determining the distance of a reflecting surface that can be used, in particular, for determining slight variations in distance such as can frequently occur in vibrating systems. Such an arrangement can also be used as optical microphone or hydrophone. The arrangement according to the invention is designed in this case such that light from a light source is directed onto a reflecting surface via a first optical fiber, and light reflected therefrom is directed onto at least one statically arranged optical detector via the first optical fiber or at least one further optical fiber. An optical element collimating in the direction of the reflecting surface is arranged between the reflecting surface and the one or more optical fibers. Furthermore, at least two optical elements focusing in the direction of the reflecting surface and whose optical axes are aligned parallel to the optical axis of the collimating optical element and are arranged at constant spacings from one another are arranged above the reflecting surface.